

08-008

FY08 Application for Nursery Research Funding

Washington State Department of Agriculture - Nursery License Surcharge

(Please use one application packet including the Progress Report page for each proposal. You must use our form - failure to do so may result in not funding your project.)

Project Title: Understanding the mechanism(s) behind repeat detections of *Phytophthora ramorum* at Washington retail nurseries

Project Leader: Gary Chastagner and Norm Dart

Institution (if any): Washington State University

Mailing Address: 7612 Pioneer Way East, Puyallup, WA 98371

Project Phone Number: (253) 445-4528 FAX Number: (253) 445-4621

Cellular or Pager Number: (253) 273-9530 E-Mail: chastag@wsu.edu

Note: Project leader or his/her designee must be available at above project phone number on March 2, 2007 between the hours of 10:00-12:00 and 1:00-3:00.

Amount Requested for (FY08) July 1, 2007 to June 30, 2008: \$20,000

Start Date: July 1, 2007 Completion Date: June 30, 2008

(Check One) *New Project* *Continuing*

If this is a multiple year project, please estimate and list the following information for each July 1 - June 30 period listed below through project completion:

Fiscal Years (FY)	July 1, 2008 to June 30, 2009	July 1, 2009 to June 30, 2010	July 1, 2010 to June 30, 2011	July 1, 2011 to June 30, 2012	July 1, 2012 to June 30, 2013
\$ Amount Needed					

If you are increasing the above amounts since your last application, please explain why:

Please list all other sources and amounts of funding for this project: (Please notify us by February 15 if other funding has been approved and from where.)

Source	\$ Amount Applied For	Approved	Pending Date of Notification

Total Amount Needed to Fund Project (Include all sources) \$20,000

If total amount from all sources is not granted, will you be able to complete the project? It will take longer.

Submit 15 copies of this proposal to: Tom Wessels, Plant Services Program Manager, P.O. Box 42560, Olympia, WA 98504-2560. All applications must be postmarked by December 31, 2006.

Please summarize the purpose of this research:

This is the third year of the USDA-APHIS Emergency Federal Order restricting the flow of nursery stock from California, Oregon, and Washington and two striking trends have emerged in Washington State. First, *P. ramorum* continues to be found in retail nurseries on certified nursery stock received from California and Oregon. Secondly, several retail nurseries in Washington have tested positive two and sometimes three consecutive years for *P. ramorum* after completing the USDA Confirmed Nursery Protocol. Trace back inspections to wholesale nurseries in California and Oregon have failed to confirm the origin of infested plant material at some nurseries and thus it is unclear if the pathogen is being reintroduced into the nursery each year or if it is persisting at the nurseries from one year to the next and just not being detected during the Confirmed Nursery Protocol. These reoccurring trends are very frustrating for the Washington Green Industry and have baffled regulators and researchers alike. The purpose of this proposed research is to understand the mechanism(s) behind continued detections of *Phytophthora ramorum* at Washington retail nurseries after they have undergone the USDA-APHIS Confirmed Nursery Protocol.

Methods of research:

Over the past 2 years we have been working with the WSDA Plant Pathology Lab in Olympia to build a collection of *P. ramorum* isolates from Washington retail nurseries that have repeatedly tested positive for *P. ramorum*. Currently we have a collection of *P. ramorum* from infected plants in 2005 and 2006 from 6 repeat nurseries in Washington State. We plan to use this collection to help determine if repeat detections in Washington retail nurseries are due to the continued shipment of infested nursery stock from wholesale nurseries in California and Oregon, or if *P. ramorum* has become established at some of these nurseries using DNA fingerprinting technology.

We will begin by generating DNA fingerprints of multiple samples found within single nurseries on a given sampling date and use these data to calculate a "baseline" level of genetic diversity. If repeat detections are occurring as a result of the repeated shipment of infested nursery stock from wholesale nurseries in California and Oregon we would expect to find a higher level of genetic diversity between samples collected in 2005 and 2006 from a given nursery than the "baseline" level. If the repeat detections are occurring from populations of the pathogen that are persisting on site, we would expect to find that the level of genetic diversity between samples collected in 2005 and 2006 from a given nursery to be similar to that of the "baseline" level.

Research will be conducted at the Washington State University Puyallup Research and Extension Station utilizing a new molecular laboratory. Some of the DNA work may initially be conducted off-site by a commercial outfit to facilitate timely results. No living samples of *P. ramorum* will be send off-site, only non-living DNA.

Expenditure Breakdown:

(Please include salaries, supplies, travel, etc.)

Wages & benefits	\$11,000
Supplies	8,000
Travel	<u>1,000</u>
Total	\$20,000

The information requested on this page will have a direct bearing on whether your research request is approved or denied. Letters of support by the industry are also encouraged.

Note: Funding is not available for general overhead cost.